

CATTLE

CATTLE are among the most important farm animals. We eat the meat of cattle as roast beef, veal, hamburger, and hot dogs. We drink the milk of cattle, and use it to make butter, cheese, and ice cream. The hides of cattle provide leather for our shoes. Cattle also furnish materials for such useful items as medicines, soap, and glue. In some countries, cattle supply a main source of power by pulling plows, carts, and wagons. In some parts of the world, a man's wealth is judged by the number of cattle he owns.

All cattle have heavy bodies, long tails, and *cloven* (divided) hoofs. Cattle chew their food two separate times to digest it. After they chew and swallow the food, they bring it up from the stomach and chew it again. This once-swallowed food is called a *cud*.

Cattle graze lazily in green pastures and on the plains. Their mooing, or *lowing*, often breaks the silence of the countryside. *Beef cattle* are raised for their meat. *Dairy cattle* are raised for their milk. *Dual-purpose* cattle provide both meat and milk. But almost all cattle eventually are killed for meat.

People on every continent raise cattle. Cattle live in cold lands such as Iceland, and in hot countries such as India. Hindus in India believe cattle are holy animals. They do not kill cattle or eat their meat.

Cattle possess less intelligence than most other do-

mestic animals. People sometimes give them names. But cattle rarely learn to respond to their names as horses and dogs do.

In America, the word *cattle* usually means cows, bulls, steers, heifers, and calves. A *cow* is a female and a *bull* is a male. *Steers* are males whose reproductive organs have been removed by an operation. A young cow is called a *heifer* until she gives birth to a calf. A *calf* is a young cow or bull. A group of cattle is called a *herd*.

Beef cattle and dairy cattle that can be traced through all their ancestors to the original animals of a breed are called *purebred*. A *registered* animal is one whose family history has been recorded with the appropriate breed association. To be eligible for registration, cattle must be born of a *sire* (bull) and *dam* (cow) that are recorded in the association's register, or *herdbook*.

In the early 1970's, about 1½ million purebred cattle were registered with national associations. Not all purebred cattle are registered. Some farmers and ranchers have no interest in registering their cattle.

The Bodies of Cattle

Cattle have muscular backs and hindquarters. Most cattle reach a height of about 5 feet (1.5 meters). Cows weigh from about 900 to 2,000 pounds (410 to 910 kilograms). Bulls may weigh 2,000 pounds or more.

Most cattle have a coat of short hair that grows thicker and somewhat longer during the winter. A few breeds have long hair. The long, shaggy hair of Gallo-

way cattle enables them to survive the extremely cold weather in Scotland, where the breed developed and where most of them are raised. Cattle also have a long tail, which they use to shoo away insects.

Teeth. Adult cattle have 32 teeth—8 in the front of the lower jaw and 12 each in the back of the upper and lower jaws. A cow cannot bite off grass because it does not have cutting teeth in the front of its upper jaw. It must tear the grass by moving its head. Cattle chew the cud with their *molars* (back teeth).

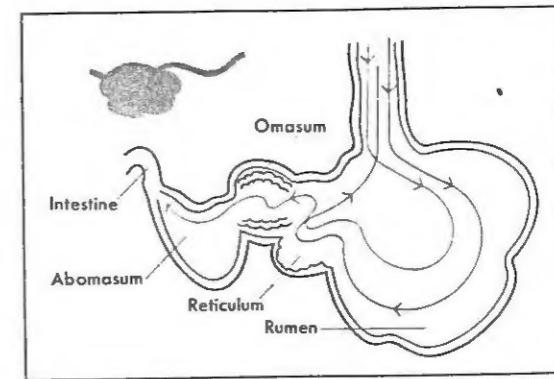
Horns. The horns of cattle are hollow and have no branches, as do those of some other horned animals such as deer. Cattle born without horns are called *polled* cattle. Cattle owners have increased the number of polled animals through selective breeding. They *dehorn* (remove the horns of) most horned cattle to keep them from injuring other cattle or people. The horns are removed with chemicals or a hot iron. In most cases, dehorning occurs when a calf is less than 3 weeks old.

Stomach. Cattle have a stomach with four compartments. This kind of stomach enables them to bring swallowed food back into their mouth to be chewed and swallowed again. Animals with such stomachs are called *ruminants*. The four compartments are the *rumen*, the *reticulum*, the *omasum*, and the *abomasum*.

When cattle eat, they first chew their food only enough to swallow it. The food goes down the *esophagus* (food pipe) into the rumen. The rumen and the reticulum form a large storage area. In that area, the food is mixed and softened. At the same time, microorganisms that grow in the rumen break down complex carbohydrates into simple carbohydrates. Such simple carbohydrates as sugars and starches provide the major source of energy for the animal. The microorganisms also build protein and many B-complex vitamins.

After the solid food has been mixed and softened, strong muscles send it back up into the animal's

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WORLD BOOK diagram by Steven Liska
A Cow's Stomach has four compartments. Food first enters the two sections shown by the red line. The cow then rechews the food as a *cud*, which follows the path shown by the blue line. In the drawing, the animal's stomach has been stretched out of its actual shape to show how food travels through it.

mouth. The animal rechews this *cud* and swallows it. The swallowed *cud* goes back to the rumen and reticulum, where it undergoes further chemical breakdown. The food and fluids then move down into the omasum, where much of the water is absorbed. The food then enters the abomasum. The walls of the abomasum produce digestive juices. These juices further digest the food. The abomasum is called the *true stomach*, because it functions in much the same way as the stomach of creatures that are not ruminants. From the stomach, the food goes to the intestine, where digestion is completed.

Udder. Cows have a baggy organ called an *udder*, which holds their milk. The udder hangs from the cow's

body a little in front of the hind legs. The udder has sections that hold milk. When a cow is milked, pressure causes the milk to squirt out of the udder through large nipples called *teats*. Some farmers still milk their cows by hand. But large dairy farms use electrically operated milking machines. Milking machines use suction to draw the milk from the cow's udder into a container (see MILKING MACHINE). Beef cows, which produce milk only for their calves, have smaller udders than dairy cows.

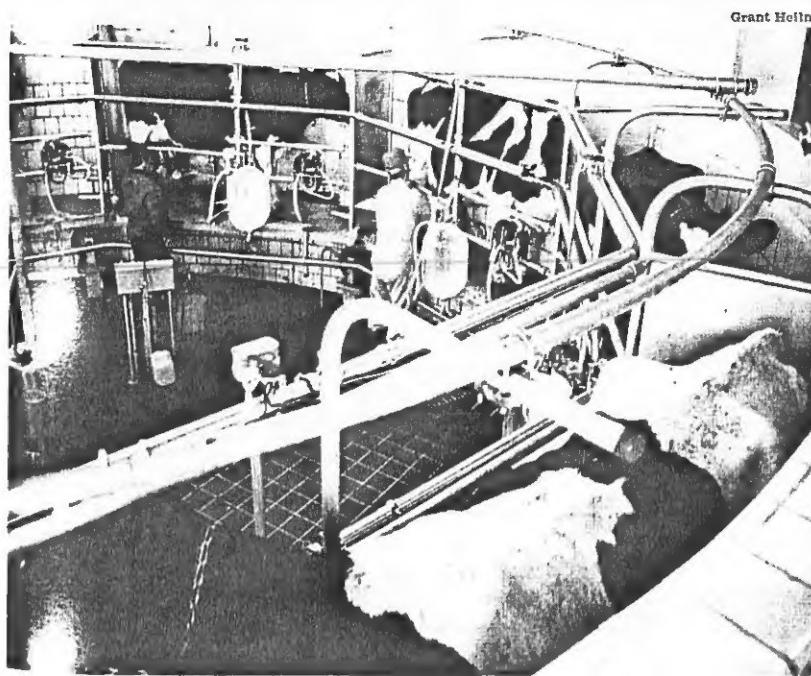
Beef Cattle

Most beef calves graze on large areas of open land that are unsuitable for growing crops. This type of feeding enables ranchers to raise stock with large numbers of workers and expensive feeding equipment. Beef calves have been bred to produce meat under such ranching conditions.

Beef cattle have also been bred to mature and fatten earlier than dairy cattle and to produce less milk than dairy cattle. However, steers and heifers from dairy breeds also provide excellent beef and supply much of the beef eaten in the United States.

Meat from calves that are less than 3 months old is called *veal*. Meat from older animals is called *beef*. Butchers classify beef into various *cuts*, such as steaks and roasts. People also eat the brains, heart, kidneys, liver, *sweetbread* (pancreas and thymus), tongue, and *tripe* (stomach lining) of cattle.

The chief breeds of beef cattle in the United States are the *Aberdeen-Angus*, *Brahman*, *Charolais*, *Hereford*, *Santa Gertrudis*, and *Shorthorn*.



Grant Hellman

A Milking Parlor on a dairy farm has sanitary equipment that milks cows, such as the Holsteins shown at the left. The milk is stored in a refrigerated tank until it is delivered to a processing plant.

Six Main Breeds of Beef Cattle

Breed	Aberdeen-Angus	Brahman	Charolais	Hereford	Santa Gertrudis	Shorthorn
Color	Black	Light gray to nearly black	White to straw-colored	Red and white	Red	Roan, red, or white; or red and white
Place of origin	Scotland	United States	France	England	United States	England
Rank in size	5	3	1	4	2	6
Year brought into United States	1873	—	1936	1817	—	1783
Rank in number registered in United States	2	6	3	1	4	5
National registry association formed	1883	1924	1957	1881	1951	1882

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Leading Beef Cattle States and Provinces

Number of beef cattle in the state or province on January 1, 1976*

Texas	15,180,000
Iowa	6,970,000
Nebraska	6,361,000
Kansas	6,268,000
Oklahoma	6,238,000
Missouri	6,214,000
South Dakota	4,291,000
California	3,870,000
Alberta	3,785,000
Minnesota	3,184,000

*State figures include all beef cattle over 500 pounds (230 kilograms) and all cattle—both beef and dairy—under 500 pounds. Province figures include all beef cattle over 1 year in age and all cattle—both beef and dairy—under one year.

Sources: U.S. Department of Agriculture; Statistics Canada.

Leading Cattle Countries

Number of beef and dairy cattle in 1975

India	180,269,000*
United States	131,826,000
Russia	109,122,000
Brazil	92,480,000
China	63,224,000*
Argentina	58,000,000
Australia	33,066,000
Mexico	28,071,000
Bangladesh	27,418,000*
France	24,700,000

* estimate.

Sources: U.S. Department of Agriculture; FAO.

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